US 20200320382A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2020/0320382 A1

Burkhart et al. (43) Pub. Date: Oct. 8, 2020

(54) **DIGITAL EXPERIENCE ENHANCEMENT USING AN ENSEMBLE DEEP LEARNING MODEL**

(71) Applicant: **Adobe Inc.**, San Jose, CA (US)

(72) Inventors: **Michael Craig Burkhart**, San Jose, CA (US); **Kourosh Modarresi**, Sunnyvale, CA (US)

(73) Assignee: **Adobe Inc.**, San Jose, CA (US)

(21) Appl. No.: **16/375,627**

(22) Filed: **Apr. 4, 2019**

Publication Classification

(51) **Int. Cl.**

G06N 3/08 (2006.01)

G06N 20/20 (2006.01)

(52) **U.S. Cl.**

CPC ***G06N 3/08*** (2013.01); ***G06N 20/20*** (2019.01)

(57) **ABSTRACT**

A digital experience enhancement system includes an ensemble deep learning model that includes an estimator ensemble and a neural network. The ensemble deep learning model is trained to generate a digital experience enhancement recommendation from an enhancement request. The ensemble deep learning model receives the enhancement request, which is input to the estimator ensemble. The estimator ensemble uses various different machine learning systems to generate estimator output values. The neural network uses the estimator output values from the estimator ensemble to generate a digital experience enhancement recommendation. The digital experience generation system then uses this digital experience enhancement recommendation to enhance the digital experience.